

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A converter comprising:

a transformer circuit including an input port, the transformer circuit including an autotransformer coupled to the input port, the input port to receive [[an]] a first direct current voltage input signal, the transformer circuit to generate a square wave signal at a transformer circuit output;

a filter coupled to the transformer circuit output, the filter to receive the square wave signal and to generate [[an]] a second direct current voltage output signal at an output port of the filter; and

a controller coupled to the transformer circuit and the filter, the controller to receive the second direct current voltage output signal from the filter and to provide one or more control signals to the transformer circuit to control the second direct current voltage output signal.

2. (Original) The converter of claim 1, wherein the autotransformer comprises three coils.

3. (Previously Presented) The converter of claim 2, wherein a diode is connected between one of the three coils the input port.

4. (Original) The converter of claim 3, wherein the filter includes an inductor coupled directly to the autotransformer.

5. (Original) The converter of claim 4, wherein the filter comprises a low-pass filter.

6. (Original) The converter of claim 4, wherein the controller comprises a synchronous buck controller.

7. (Currently Amended) ~~The converter of claim 1,~~ A converter comprising:

a transformer circuit including an input port, the transformer circuit including an autotransformer coupled to the input port, the input port to receive a direct current voltage signal, the transformer circuit to generate a square wave signal at a transformer circuit output, wherein the autotransformer comprises no more than two coils, the two coils having all or part of their turns in common;

a filter coupled to the transformer circuit output, the filter to generate an output signal at an output port; and

a controller coupled to the transformer circuit and the filter, the controller to receive the output signal from the filter and to provide one or more control signals to the transformer circuit to control the output signal.

8. (Original) The converter of claim 7, wherein the input port is connected in series with a switch and the autotransformer, and a diode is connected in parallel with the switch and the autotransformer.

9. (Original) The converter of claim 8, wherein the switch comprises an insulated gate metal-oxide semiconductor field-effect transistor.

10. (Original) The converter of claim 9, wherein the controller comprises a synchronous buck controller.

11. (Currently Amended) The converter of claim 1, wherein the first direct current voltage input signal has an input signal value and the second direct current voltage output signal has an output signal value and the output signal value is less than the input signal value.

12. (Original) The converter of claim 11, wherein the input signal value is about forty-eight volts and the output signal value is about six-tenths of a volt.

13. (Original) The converter of claim 1, wherein the converter further comprises a second converter coupled to the output signal.

14. (Original) The converter of claim 13, where the second converter is operated 180 degrees out of phase from the converter.

15. (Previously Presented) A method comprising:

receiving a first input signal at a transformer circuit including a first coil and a second coil;

activating a first switch to serially connect the first coil to the second coil;

activating a second switch to connect the second coil to a second input signal;

deactivating the first switch and the second switch; and

activating a third switch to connect a filter input signal to the second input signal.

16. (Original) The method of claim 15, wherein receiving the first input signal at the transformer circuit including a first coil and a second coil comprises receiving a substantially direct current voltage signal from a power source.

17. (Original) The method of claim 15, wherein activating the first switch to serially connect the first coil to the second coil comprises activating the first switch from a first control signal provided by a controller.

18. (Original) The method of claim 17, wherein activating the second switch to connect the second coil to the second signal comprises activating the second switch from the first control signal.

19. (Original) The method of claim 15, wherein deactivating the first switch and the second switch comprises deactivating the first switch before deactivating the second switch.

20. (Original) The method of claim 19, wherein activating the third switch to connect the third switch to the second control signal comprises activating the third switch after deactivating the first switch and the second switch.

21. (Previously Presented) The method of claim 15, further comprising connecting the filter input signal to a filter having an output signal and connecting a controller to the output signal.

22. - 28. (Canceled)

29. (New) The converter of claim 1, wherein the transformer circuit includes a switch to couple the transformer circuit output to a ground potential.

30. (new) The converter of claim 7, wherein the transformer circuit includes a switch to couple a transformer circuit output port to a ground potential.

31. (New) The converter of claim 7, wherein the direct current voltage signal has an input signal value and the output signal has an output signal value and the output signal value is less than the input signal value.

32. (New) The converter of claim 31, wherein the input signal value is about forty-eight volts and the output signal value is about six-tenths of a volt.

33. (New) The converter of claim 7, wherein the converter further comprises a second converter coupled to the output signal.

34. (New) The converter of claim 33, where the second converter is operated 180 degrees out of phase from the converter.

35. (New) The converter of claim 7, wherein the output signal is a second direct current voltage signal.